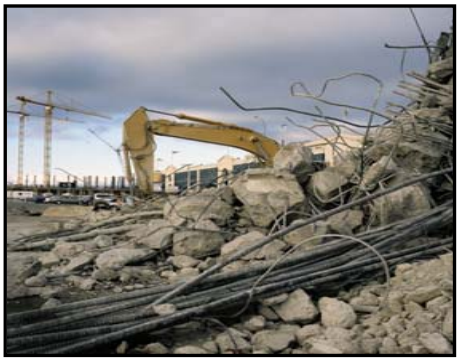

No City-specific CDD waste stream characterization data are available to estimate the percentage composition of the CDD waste stream of each waste type. A national study of CDD, completed in 1998, provided limited data on several waste characterization studies that have been conducted, and the CDD composition varied greatly depending on the type of project undertaken. The study found, in general, that the major components of CDD for residential projects are wood (14 to 67 percent), drywall (17 to 27 percent), roofing materials, concrete, and brick.

The average Fairfax County CDD generation over the last five years is 4.14 pounds per capita.

Fairfax County estimated its CDD per capita generation rate by dividing total annual CDD attributable to Fairfax County received by the facilities listed in Table 2-5 by the county population for that year. As presented in Table 2-5, the generation rate has decreased over the preceding five years from 4.27 to 3.88 pcd, a decrease of 10 percent. Over the last five years, the average CDD generation rate is 4.14 pcd.

Special Wastes

Special wastes generated in the City of Falls Church include hazardous wastes, regulated medical wastes, household hazardous wastes, tires, used oil, used antifreeze, and batteries.

Waste Generation Activities

Special wastes are components of the City's solid waste stream that have unique collection, disposal, or recycling requirements. Special wastes include hazardous wastes, regulated medical wastes (RMW), household hazardous wastes (HHW), tires, used oil, antifreeze, batteries, sludge, septage, mining wastes, agricultural wastes, and spill residues.

Hazardous wastes generated by commercial activities are regulated and must be disposed properly. Hospitals, clinics, and physician's offices generate RMW. Residents generate HHW at their homes, including aerosols, pesticides, oil based paints, and other hazardous materials. Households, auto shops, and the City government motor pool generate used tires, used oil, antifreeze, and used batteries.

Since the City does not contain a wastewater treatment plant, no wastewater treatment sludge is generated in the City of Falls Church. The City also generates minimal reportable septage, agricultural wastes, mining wastes, and spill residues. The City does not expect the annual generation quantities of these wastes to increase to measurable levels, so this SWMP does not include waste projections for these special wastes.

Waste Stream Material Types and Generation Rates

Hazardous Wastes

The U.S. Environmental Protection Agency (EPA) establishes criteria for the identification and classification of hazardous wastes and sets

requirements for their proper management. In the City of Falls Church, private companies collect, transport and dispose hazardous wastes generated in the City. These wastes are disposed in certified facilities to prevent the release of hazardous constituents to the environment.

Businesses in the City of Falls Church that generate more than 220 pounds or 27 gallons of commercial hazardous waste per month are categorized as hazardous waste generators and must abide by EPA and Department of Transportation (DOT) hazardous waste regulations. These regulations include specific requirements for the transport, storage, and disposal of commercial hazardous waste; hazardous waste generators typically contract with permitted disposal companies for collection.

For conditionally exempt small quantity generators (CESQG) in the City—businesses that generate less than 220 pounds or 27 gallons of hazardous material per month—Fairfax County provides a CESQG collection program. Safety Kleen Services, Inc., and Curbside, Inc., which operate the program, collect and dispose of hazardous waste directly from the businesses.

Regulated Medical Waste

RMW is primarily generated by medical facilities. A solid waste is considered an RMW if it meets the following criteria defined by the VDEQ in 9VAC 20-120-140 of the Virginia Regulations:

> Any solid waste, as defined in this chapter is a regulated medical waste if it is suspected by the health care professional in charge of being capable of producing an infectious disease in humans. A solid waste shall be considered to be capable of producing an infectious disease if it has been or is likely to have been contaminated by an organism likely to be pathogenic to healthy humans, such organism is not routinely and freely available in the community, and if such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease. If the exact cause of a patient's illness is unknown, but the health care professional in charge suspects a contagious disease is the cause, the likelihood of pathogen transmission shall be assessed based on the pathogen suspected of being the cause of the illness.

Examples of RMW include human blood, body fluids or items contaminated with these fluids, organs, body parts, needles and syringes (sharps), bedding materials, and bandages.

Home-generated medical waste is not regulated and may be disposed of with other MSW.

Generation Rates

Currently, all commercially generated RMW in the City is transported outside the City for treatment and disposal by properly licensed commercial waste disposal facilities. No data exist on quantities of RMW generated within the City. However, the VDEQ collects data on solid waste managed in the state annually. RMW generation in Virginia ranged from 21,132 to 24,591 tons per year from 1999 to 2002. Table 2-6 shows the tons of RMW managed in Virginia from 1999 to 2002.

Table 2-6. Virginia RMW Generation (tons)

	1999	2000	2001	2002	Average
RMW	21,821	23,076	21,132	24,591	22,655
Virginia Population	6,872,912	7,105,900	7,196,750	7,293,542	7,117,276
Generation rate (pcd)	**0.0174**	**0.0178**	**0.0161**	**0.0185**	**0.0174**

Virginia's RMW management regulations set standards for the storage, transportation, and treatment of RMW. It must be either stored, steam sterilized, incinerated, or treated by an acceptable alternative mechanism in an acceptable facility. Innovative treatment technology may be allowed if the effectiveness of the treatment can be demonstrated.

In some cases, transportation of RMW by medical personnel requires no prior certification to VDEQ. However, commercial operators must file a certification that their businesses satisfy VDEQ's requirements before they can accept infectious material for transport. In all cases, the transportation of RMW is subject to the provisions in 49 CFR 171 through 178.

Household Hazardous Wastes

VDEQ defines HHW as any household waste material that would be classified as a hazardous waste (in accordance with 9VAC 20-60) if it came from a business.[2]

Households generate many types of HHW during daily activities. Generally, a substance is considered hazardous if it can catch fire, react or explode when mixed with other substances, or is corrosive or toxic. Hazardous substances are more specifically defined as follows:

[2] Virginia Waste Management Board, 9 VAC 20-80-10, "Definitions."

- *Corrosive*. A chemical, or its vapors, that can cause deterioration or irreversible alteration in body tissues at the site of contact and deteriorate or wear away the surface of a material.

- *Flammable*. A substance that can be ignited under almost all temperature conditions.

- *Irritant.* A substance that causes soreness or inflammation of the skin, eyes, mucous membranes, or respiratory system.

- *Toxic*. A substance that may cause injury or death upon ingestion, absorption, or inhalation.

The most common types of HHW generated in the City are:

acids	driveway sealers	insecticides	polishes
aerosol sprays	floor care products	mercury products	pool chemicals
asbestos products	fungicides	moth balls	rust removers
automotive fluids	glue (solvent base)	paint (oil base)	varnish and stains
batteries	herbicides	paint thinner	weed killers
coal tar products	inks and dyes	poisons	wood preservatives

Generation Rates

City residents currently dispose of hazardous wastes generated from City households (Household Hazardous Wastes) at Fairfax County collection facilities.

Currently, City residents may dispose of their HHW at Fairfax County's HHW collection center at the I-66 Transfer Station. This service is provided free-of-charge to Falls Church City residents. Fairfax County does not maintain separate HHW data for City residents. Therefore, the City is using Fairfax County data to develop HHW per capita generation estimates.

Table 2-7 shows quantities of HHW collected by the county over the preceding years by HHW material. Table 2-8 shows historical totals and per capita rates for county HHW generation.

Table 2-7. Fairfax County Annual HHW Collection (pounds)

Material	1998	1999	2000	2001	2002	Totals	Average
Solvents	96,850	108,600	89,300	73,600	80,950	449,300	89,860
Oil paints	89,600	85,750	71,000	87,050	100,750	434,150	86,830
Flammables in cans	21,000	68,775	62,475	58,275	50,400	260,925	52,185
Pesticides	65,325	75,150	64,800	86,400	85,500	377,175	75,435
Corrosives, bulk	3,200	5,200	3,600	5,200	6,000	23,200	4,640
Corrosives, labpack	4,300	3,700	2,040	4,400	5,620	20,060	4,012
Ammonia, bulk	400	800	—	—	400	1,600	533
Mercury	590	325	550	50	50	1,565	313
Aerosols	21,025	20,800	24,600	34,650	4,800	105,875	21,175
Lithium batteries	100	—	—	—	50	150	75
NiCad batteries	3,600	1,800	600	1,800	1,200	9,000	1,800
Misc. chemicals	600	1,595	60	—	20	2,275	569
Reactives	196	20	—	—	1,600	1816	605
Oxidizer	1,350	4,050	450	2,250	3,600	11,700	2,340
Asbestos	—	200	200	400	200	1,000	250
Absorb with oil	800	—	—	—	—	800	800
Total pounds	**308,936**	**376,765**	**319,675**	**354,075**	**341,140**	**1,700,591**	**340,118**
Total tons	**154**	**188**	**160**	**177**	**171**	**850**	**170**

Table 2-8. Fairfax County Special Waste Generation (tons)

Waste	1998	1999	2000	2001	2002	Average	Generation rate (pcd)
HHW	193	198	165	178	184	184	0.0010
Tires	—	7,415	11,243	11,639	9,562	9,965	0.0542
Oil	—	8,019	7,208	7,316	—	7,514	0.0412
Antifreeze	—	—	—	920	—	920	0.0050
Batteries	—	482	582	981	—	682	0.0037
Population[b]	962,910	978,038	1,001,624	1,016,406	1,032,205	998,237	

[a] Data represent quantities of sludge prior to incineration

[b] Includes populations of the Cities of Fairfax and Falls Church and the Towns of Herndon, Vienna, and Clifton

Used tires generated in the City are collected at the I-95 Landfill Complex for transport to tire recyclers.

Used Tires

Virginia bans the land disposal of used tires. In addition, the General Assembly enacted a 50¢-per-tire tax (Section 58.1-641 of the Code of Virginia) and directed VDEQ to develop and implement a plan (Section 10.1-1422 of the Code of Virginia) for the transportation and management of all waste tires

generated within the state. Virginia temporarily raised the tax to $1 per tire between July 2003 and July 2006. The revenues are placed in the Waste Tire Trust Fund.

Used tires collected in the City of Falls Church are recycled for use for civil engineering projects, as a fuel source, and in recycled products, primarily outside of the City. Tire use in civil engineering projects includes landfill daily cover, landfill drainage media, landfill improvements, septic drainfields, golf course drainage, and roadway base. As a fuel source, chipped or shredded tires are used in some waste-to-energy facilities, electricity-generating facilities, pulp and paper mills, and cement kilns. The recycled product uses include mats, highway noise walls, pavement sealers, playground surfaces, brake pads, blasting mats, eco-blocks, and arena footings.

Used tires are collected by the City and by private haulers from auto shops and transported to Fairfax County's I-95 Landfill Complex. All tires are transferred to the back pad at the I-95 Landfill Complex and subsequently transported to tire recyclers. An unknown quantity of used tires is also transported directly to recycling facilities, bypassing the City collection facilities.

Generation Rates

Fairfax County does not maintain separate used tire data for City residents. Therefore, the City is using Fairfax County data to develop used tire per capita generation estimates. Used tire collection and recycling in Fairfax County, as reported by the Fairfax County Division of Solid Waste Collection and Recycling (DSWCR), ranged from 11,243 to 9,562 tons per year from 2000 through 2002. Table 2-8 includes the county collection data for tires.

Used Oil and Antifreeze

Used oil and antifreeze are collected at Fairfax County facilities, auto shops, and motor pools.

City-generated used oil and antifreeze are currently accepted at no charge at the citizen's drop-off centers at Fairfax County's I-95 and I-66 locations, as well as by private collection firms and recycling firms that service auto shops and motor pools.

Generation Rates

Fairfax County DSWCR compiles data from all of these collection sources annually (Table 2-8). Fairfax County does not maintain separate used oil and antifreeze data for City residents. Therefore, the City is using Fairfax County data to develop used oil and antifreeze per capita generation estimates.